IN THE CLAIMS

The current status of the claims is reflected in the below listing of claims:

1. (Original) An alloy for use as a catalyst in oxidation or reduction reactions, the alloy comprising platinum at a concentration that is between about 10 and about 80 atomic percent, zinc, and at least one of nickel and iron.

2. (Original) The alloy of claim 1 consisting essentially of platinum, zinc, and at least one of nickel and iron.

3. (Original) The alloy of claim 1 comprising a concentration of zinc that is between about 2 and about 70 atomic percent.

4. (Original) The alloy of claim 1 comprising a concentration of nickel, iron, or combination thereof that is between about 5 and about 80 atomic percent.

5. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 10 and about 80 atomic percent, a concentration of zinc that is between about 2 and about 70 atomic percent, and a concentration of nickel, iron, or combination thereof that is between about 5 and about 80 atomic percent.

6. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 15 and about 60 atomic percent, a concentration of zinc that is between about 5 and about 60 atomic percent, and a concentration of nickel,

iron, or combination thereof that is between about 10 and about 70 atomic percent.

7. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 10 and about 80 atomic percent, a concentration of zinc that is between about 5 and about 60 atomic percent, and a concentration of nickel that is between about 10 and about 70 atomic percent.

8. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 15 and about 50 atomic percent, a concentration of zinc that is between about 15 and about 50 atomic percent, and a concentration of nickel that is between about 20 and about 60 atomic percent.

9. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 20 and about 35 atomic percent, a concentration of zinc that is between about 20 and about 40 atomic percent, and a concentration of nickel that is between about 30 and about 55 atomic percent.

10. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 20 and about 30 atomic percent, a concentration of zinc that is between about 5 and about 15 atomic percent, and a concentration of nickel that is between about 60 and about 70 atomic percent.

11. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 10 and about 80 atomic percent, a concentration of zinc that is between about 2

and about 70 atomic percent, and a concentration of iron that is between about 5 and about 80 atomic percent.

12. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 20 and about 60 atomic percent, a concentration of zinc that is between about 5 and about 50 atomic percent, and a concentration of iron that is between about 10 and about 80 atomic percent.

13. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 35 and about 50 atomic percent, a concentration of zinc that is between about 5 and about 35 atomic percent, and a concentration of iron that is between about 20 and about 60 atomic percent.

14. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 40 and about 60 atomic percent, a concentration of zinc that is between about 10 and about 30 atomic percent, and a concentration of iron that is between about 25 and about 50 atomic percent.

15. (Original) The alloy of claim 1 comprising a concentration of platinum that is between about 20 and about 40 atomic percent, a concentration of zinc that is between about 20 and about 50 atomic percent, and a concentration of iron that is between about 25 and about 40 atomic percent.

16. (Previously Presented) A supported electrocatalyst powder for use in electrochemical reactor devices, the supported electrocatalyst powder comprising the alloy of claim 1 and

electrically conductive support particles upon which the alloy is dispersed.

17. (Original) The supported electrocatalyst powder of claim 16 wherein the electrically conductive support particles are selected from the group consisting of inorganic supports and organic supports.

18. (Original) The supported electrocatalyst powder of claim 17 wherein the electrically conductive support particles are selected from the group consisting of carbon supports and electrically conductive polymer supports.

19. (Previously Presented) A fuel cell electrode, the fuel cell electrode comprising electrocatalyst particles and an electrode substrate upon which the electrocatalyst particles are deposited, the electrocatalyst particles comprising the alloy ~~as~~ of claim 1.

20. (Original) The fuel cell electrode of claim 19 wherein the electrocatalyst particles comprise electrically conductive support particles upon which the alloy is dispersed.

21. (Original) The fuel cell electrode of claim 20 wherein the electrically conductive support particles are selected from the group consisting of carbon supports and electrically conductive polymer supports.

22. (Previously Presented) A fuel cell comprising an anode, a cathode, a proton exchange membrane between the anode and the cathode, and the alloy of claim 1 for the catalytic

oxidation of a hydrogen-containing fuel or the catalytic reduction of oxygen.

23. (Original) The fuel cell of claim 22 wherein the alloy is dispersed on electrically conductive support particles.

24. (Original) The fuel cell of claim 22 wherein the fuel consists essentially of hydrogen.

25. (Original) The fuel cell of claim 22 wherein the fuel is a hydrocarbon-based fuel.

26. (Original) The fuel cell of claim 22 wherein the fuel comprises methanol.

27. (Original) The fuel cell of claim 22 wherein the alloy is on the surface of the proton exchange membrane and in contact with the anode.

28. (Original) The fuel cell of claim 22 wherein the alloy is on the surface of the anode and in contact with the proton exchange membrane.

29. (Original) The fuel cell of claim 22 wherein the alloy is on the surface of the proton exchange membrane and in contact with the cathode.

30. (Original) The fuel cell of claim 22 wherein the alloy is on the surface of the cathode and in contact with the proton exchange membrane.

31. (Previously Presented) A method for the electrochemical conversion of a hydrogen-containing fuel and oxygen to reaction products and electricity in a fuel cell comprising an anode, a cathode, a proton exchange membrane therebetween, the alloy of claim 1, and an electrically conductive external circuit connecting the anode and cathode, the method comprising contacting the hydrogen-containing fuel or the oxygen and the alloy to catalytically oxidize the hydrogen-containing fuel or catalytically reduce the oxygen.

32. (Original) The method of claim 30 wherein the hydrogen-containing fuel consists essentially of hydrogen.

33. (Original) The method of claim 30 wherein the hydrogen-containing fuel is a hydrocarbon-based fuel selected from the group consisting of saturated hydrocarbons, garbage off-gas, oxygenated hydrocarbons, fossil fuels, and mixtures thereof.

34. (Original) The method of claim 30 wherein the hydrogen-containing fuel is methanol.

35. (Original) An unsupported alloy layer on a surface of a electrolyte membrane or an electrode, said unsupported alloy layer comprising platinum at a concentration that is between about 10 and about 80 atomic percent, zinc, and at least one of nickel and iron.